

REMARKS

Upon entry of the amendment, claims 1-10 will be all the claims pending in the application. Claim 1 has been amended to recite that the permeation-side passage materials are between the separation membranes based on, for example, JP 2000-350922 on page 5 of the specification (a partial English translation of JP 2000-350922 is submitted herewith).

New claims 8-9 have been added based on, for example, page 7, second full paragraph of the specification. New claim 10 has been added based on, for example, JP 2000-350922 on page 5 of the specification.

It is respectfully submitted that with the entry of the proposed amendments, the present application will be in condition for allowance.

Accordingly, entry of the above amendments is respectfully requested.

Initially, the Examiner is respectfully requested to acknowledge Applicants' claim to priority under 35 U.S.C. §119, and confirm receipt of the priority document.

I. Response to Rejection of Claims 1-7 under 35 U.S.C. § 102(b)

Claims 1-7 are still rejected under 35 U.S.C. §102(b) as allegedly being anticipated by JP-2002-018248 ("JP '248").

Applicants respectfully traverse the rejection.

Amended claim 1 is directed to a spiral separation membrane element comprising a perforated core tube and, wound therearound, one or more separation membranes, one or more feed-side passage materials, and one or more permeation-side passage materials, wherein the permeation-side passage materials each have warps extending almost parallel with the direction of flow of a permeated liquid and wefts fixed to the warps, a ratio of the pitch

(width of each warp + distance between the opposed sides of adjacent warps) to a distance between the opposed sides of adjacent warps is 1.1/1 to 3/1, and a ratio of a thickness of the passage material to a distance between the opposed sides of adjacent warps is 0.25/1 to 1.25/1 and wherein the permeation-side passage materials are between the separation membranes.

The Examiner considers member 50 of JP '248 as corresponding to the "permeation-side passage material".

Applicants respectfully disagree.

JP '248 discloses a spiral type gas-liquid contact membrane element 10, which is formed by overlaying a hydrophobic porous membranes 14 on both surfaces of a liquid-side flow channel material 13, further overlaying two gas-side flow channel materials 15 on the other surface of the hydrophobic porous membrane 14 and wrapping these materials about the perimeter of the gas supply pipe 11. See [0042] of partial translation. Thus, member 50 is wound around the outer peripheral part of element 10. See Figs. 3 and 5 and [0062]-[0065].

Thus, member 50 does not correspond to the permeation-side passage material of claim 1, which is located between the separation membranes.

In addition, material 13 is disposed between separation membranes, however, JP '248 does not disclose, teach or suggest that material 13 has the claimed ratio of pitch to distance or the claimed ratio of thickness.

Furthermore, in the apparatus of JP '248, one side of the separation membrane faces gas and the other side faces a liquid. This configuration is different from the claimed invention.

In view of the above, it is respectfully submitted that JP '248 does not anticipate claim 1, and that claims 1-10 are patentable over JP '248.

Accordingly, withdrawal of the rejection is respectfully requested.

II. Response to Rejection of Claims 1 and 3-5 under 35 U.S.C. § 102(b)

Claims 1 and 3-5 are still rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Janneck (US 4,022,692).

Applicants respectfully traverse the rejection.

As noted above, claim 1 recites "A spiral separation membrane element comprising a perforated core tube and, wound therearound, one or more separation membranes, one or more feed-side passage materials, and one or more permeation-side passage materials".

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. In addition, for anticipation, the *identical invention* must be shown in as *complete detail* as is contained in the claim. See MPEP §2131.

In this case, Janneck does not disclose all of the elements of claim 1. Specifically, Janneck does not disclose at least one of the claimed "permeation-side passage material" or "feed-side passage material", particularly in view of Fig. 1 and the corresponding disclosure thereof. In addition, the Examiner considers that the "spacer material" of Janneck corresponds to the "permeation-side passage material" based on Fig. 3. However, if the spacer material of Janneck corresponds to the claimed "permeation-side passage material" of claim 1, then Janneck fails to disclose a "feed-side passage material" of claim 1. Thus, Janneck does not anticipate claim 1.

In addition, there is no disclosure in Janneck that teaches or suggests the addition a feed-side passage material to the apparatus of Janneck, and thus, one of ordinary skill in the

art would not be motivated to modify the apparatus of Janneck to arrive at the claimed invention.

Furthermore, claims 2 and 5 are patentable over Janneck for the following additional reasons. Janneck discloses the following information regarding the support screen 10 at column 4, lines 1-20: "Filament 18 has a diameter of 0.85 MM 0.10 MM; Filament 20 has a diameter of 0.40 MM + 0.10 or -0.05 MM; Centerline spacing between filaments 18 is 3.5533 MM + 0.2538 MM; and Centerline spacing between filaments 20 is 1.6244 MM + 1.269 MM". Based on Figs. 3-7, filaments 18 and 20 correspond to the warp and weft, respectively. Accordingly, "pitch (W2)", "distance between the opposed sides of adjacent warps (W1)" and "thickness of the passage material (t)" of Janneck are 3.5533-3.8071 mm (centerline spacing between filaments 18), 2.6033-2.9571 mm (W2 - diameter of warp), and 1.20-1.45 mm (diameter of warp + diameter of weft), respectively.

Based on these values, the ratio of the height of each warp to the thickness of the passage material (h/t) is 0.59-0.79, which is outside the range of 0.91-0.97 (10/11 to 30/31) recited in claim 2. In addition, as noted above, the diameter of warp is 0.85-0.95 mm, which is outside the range of 350-600 μ m recited in claim 5, and the diameter of the weft is 0.35-0.50 mm, which is outside the range of 20-50 μ m recited in claim 5.

In view of the above, it is respectfully submitted that claims 1 and 3-5 are patentable over Janneck, and withdrawal of the rejection is respectfully requested.

III. Conclusion

For the foregoing reasons, reconsideration and allowance of claims 1-10 is respectfully requested.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No.: 10/802,002

Attorney Docket: Q80363

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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[0003]

For example, a spiral-type liquid separation element 1 using reverse osmosis membranes and the like, shown in Fig. 1, which is the most widely used since it is possible to include large membrane area into a fixed volume, is constituted in such a manner that a separation membrane 3 is arranged so as to sandwich a permeation liquid passage material 2 to form an envelope-shape membrane 4, and the envelope-shape membrane 4 is arranged so that an opening side thereof locates toward a water-catchment tube 5, and the envelope-shape membrane 4 and a feed-side passage material 6 are laminated and spirally wound around the water-catchment tube. In this spiral-type liquid separation element 1, a supplied liquid 7 is fed from one end portion of the spiral-type liquid separation element 1, the liquid flows along the feed-side passage material 6, and the liquid is discharged from another end portion of the spiral-type liquid separation element 1 as a condensed water 8. A permeate 9, which permeates through the separation membrane 3 while the supplied liquid 7 flows along the feed-side passage material 6, flows along the permeation liquid passage material 2 and passes through water-catchment holes 10 of the water-catchment tube 5, and is discharged from end portion of the water-catchment tube.